

## **SECTION 32 17 13**

### **PARKING BUMPERS**

#### **PART 1 - GENERAL**

##### **1.01 SECTION INCLUDES**

- A. Parking bumpers.
- B. Adhesive.
- C. Steel bars for installation.

##### **1.02 MEASUREMENT AND PAYMENT**

- A. Measurement: Precast concrete parking bumpers will be measured for payment as an aggregate lump-sum unit, acceptably installed and completed.
- B. Payment: Precast concrete parking bumpers will be paid for in aggregate at the Contract Lump-sum price, as indicated in the Bid Schedule of the Bid Form.

##### **1.03 REFERENCES**

- A. State of California, Department of Transportation (Caltrans), Standard Specifications, 1992 edition:
  - 1. Section 95 Epoxy

##### **1.04 SUBMITTALS**

- A. General: Refer to Section 01 33 00 - Submittal Procedures, and Section 01 33 23 - Shop Drawings, Product Data, and Samples, for submittal requirements and procedures.
- B. Shop Drawings: Submit Shop Drawings of bumpers, including plan layout and installation details, for approval.
- C. Product Data: Submit manufacturers' product data of precast bumpers and epoxy adhesive for approval.

##### **1.05 QUALITY ASSURANCE**

- A. Precast parking bumpers shall be manufactured for the intended purpose by a company or firm specializing in the manufacture of precast concrete parking appurtenances.

#### **PART 2 - PRODUCTS**

##### **2.01 MATERIALS**

- A. Parking Bumpers:

## PARKING BUMPERS

1. Provide precast concrete parking bumpers of half octagonal configuration and dimensions indicated. Unless indicated otherwise, provide bumpers of 36-inch length.
  2. Bumpers shall be manufactured of Class 4000 reinforced concrete, as specified in Section 03 05 15 - Portland Cement Concrete, to withstand constant use and rough service. Each bumper shall be reinforced with two No. 4 deformed steel reinforcing bars, minimum.
  3. Each bumper to be installed on at-grade asphalt pavement shall be manufactured with two holes to accommodate the installation rebar. Holes shall be positioned 6 inches in from each end.
  4. Bumpers to be installed on concrete slabs of parking structures, shall be manufactured without holes.
- B. Adhesive: Adhesive for anchoring bumpers or wheel stops to pavement shall be an epoxy adhesive manufactured for the purpose, similar and equal to the adhesives specified in Section 95 of the Caltrans Standard Specifications, Article 95-2.04 or 95-2.05.
- C. Steel Bars for Installation: Epoxy-coated rebar, No. 5 size, conforming with applicable requirements of Section 03 20 00 - Concrete Reinforcing.

## PART 3 - EXECUTION

### 3.01 INSTALLATION

- A. Precast concrete bumpers shall be anchored and secured in position on at-grade asphalt pavements, as indicated, with two No. 5 epoxy-coated rebar and an appropriate epoxy adhesive as specified in Article 2.01.B herein.
- B. Precast concrete bumpers shall be secured in position on at-grade concrete pavements, as indicated, with an appropriate epoxy adhesive as specified in Article 2.01.B herein.

**END OF SECTION 32 17 13**